DOI: 10.1111/mila.12177

WILEY

ORIGINAL ARTICLE

The generality problem for intellectualism

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Funding information
United Kingdom Arts and Humanities Research Council

According to intellectualism, knowing how to V is a matter of knowing a suitable proposition about a way of V-ing. In this paper, I consider the question of which ways of acting might figure in the propositions that intellectualists claim constitute the object of knowledge-how. I argue that intellectualists face a version of the generality problem—familiar from discussions of reliabilism—as not all ways of V-ing are such that knowledge about them suffices for knowledge-how. I consider various responses to this problem and argue that none are satisfactory.

KEYWORDS
anti-intellectualism, generality problem, intellectualism, knowledge-how, reliabilism

1 | INTRODUCTION

What does it take to know how to swim? According to the influential intellectualist account proposed by Stanley and Williamson (2001), and developed by Stanley (2011) and Pavese (2015b), what it takes is knowing the right kind of proposition about how to swim in the right kind of way.[1] It is uncontroversial that knowing how (of the relevant practical kind)[2] often requires some propositional knowledge. To know how to swim, one needs to know *what swimming is.* However, it is controversial whether there is a species of propositional knowledge that is sufficient for knowing how. Following Glick (2015, p. 538), let's call the problem of isolating a kind of propositional knowledge, which is sufficient for knowing how the *sufficiency problem* for intellectualism.

One aspect of the sufficiency problem concerns the practicality of knowledge-how. Much propositional knowledge about how to swim doesn't have the right kind of practical character to be sufficient

[1] "Intellectualism" is used in several different ways in the literature (Bengson & Moffett, 2011b; Glick, 2011; Pavese, 2016a, 2016b; Habgood-Coote 2018). I will use "intellectualism" to refer to the view that knowledge-how is a species of propositional knowledge and "anti-intellectualism" to refer to the view that knowledge-how is not a species of propositional knowledge.

[2] Throughout, I will be identifying knowledge-how with knowledge that is distinctively practical and not with knowledge picked out by "knows how" or "knows how to" (Glick, 2011; Hornsby 1980, p. 84).

for knowledge how to swim (consider the propositional knowledge that might be possessed by someone who's never been in the water). Let's call the problem of isolating propositional knowledge that is relevantly practical *the practicality problem.* The standard response to the practicality problem is to claim that knowing how requires knowing a proposition under a *practical mode of presentation* (PMP).[3] In this paper, I want to put the practicality problem to one side. Instead, I will focus on a different aspect of the sufficiency problem, concerning how to isolate propositional knowledge about swimming that is exactly about swimming, rather than just one of its aspects (like moving one's arms) or some broader class of activity (like moving one's body around).[4] I will call this problem the *generality problem for intellectualism* in deliberate allusion to the generality problem for reliabilism.

The central goal of this paper is to argue that the generality problem is a serious issue for the version of intellectualism articulated by Stanley and Williamson (2001) and Stanley (2011). This isn't to say that this is only a problem for Stanley and Williamson's theory. The generality problem will affect any intellectualist theory that appeals to the notion of a way of acting and will even emerge for anti-intellectualist theories. Stanley and Williamson's view will be the principal target, but in Section 4.6, I will consider Pavese's view (Pavese, 2015b).

In Section 2, I introduce the central elements of Stanley and Williamson's intellectualism, exploring its reliance on the notion of a *way of acting.* In Section 3, I argue that the appeal to ways of acting in the intellectualist theory leads to a problem with a similar structure as the generality problem for reliabilism. In Section 4, I consider some potential solutions to this problem—taking pointers from the debate about reliabilism—and argue that none are satisfactory. In Section 5, I consider the scope of the generality problem, showing how problems arise for some anti-intellectualist theories.

2 | INTELLECTUALISM

Contemporary intellectualism (Pavese, 2015b; Stanley, 2011; Stanley & Williamson, 2001) takes as its starting point what we might call the *answer theory* of knowledge-wh (I take this label from Braun, 2011, p. 249, see also Higginbotham (1996), Schaffer (2007), Parent (2014)). The answer theory starts with the linguistic insight that interrogative phrases such as "who came to the party?" or "how to swim?" semantically express the proposition (or propositions) that answer the question expressed by the phrase.[5,6] The idea is to then apply this general treatment to interrogative complements of verbs like "knows."[7] Removing quotation marks, this gives the following schematic account of knowledge-wh:

ANSWER THEORY: *S* knows *Wh-F?* iff *S* knows that *p*, and *p* answers the question *Wh-F?*

which entails that knowledge-wh—which includes knowledge-how—is a kind of propositional knowledge.

[3] See (Glick, 2015) for criticism of the explanatory value of PMPs and (Pavese, 2015b) for a defence. There are both Russellian (Stanley & Williamson, 2001) and Fregean (Pavese, 2015b; Stanley, 2011) accounts of PMPS, which claim that PMPs are either *ways of thinking* of propositions or *constituents* of propositions. I will default to the Russellian formulation below, with some exceptions.

[4] See Schaffer on playing the flute (2007, p. 396), Braun's discussion of the answer theory (2011, pp. 249–252), and Fridland's discussion of granularity (Fridland, 2013).

[5] I use "question" to refer to the semantic value of an interrogative clause rather than to a kind of sentence or phrase (an interrogative) or to a kind of speech act (asking a question). I will italicize questions and put interrogative phrases in quotation marks.

[6] On the semantics of knowledge-wh ascriptions, see (Bhatt, 2006; Groenendijk & Stokhof, 1984; Hamblin, 1958, 1973; Karttunen, 1977; Lahiri, 2002; Wisniewski, 2015).

[7] Setting to one side verbs like "wonder," which seem to relate to questions rather than to their answering propositions. For a linguistic discussion of "knows"/"wonders" type verbs, see (Lahiri, 2002, pp. 189–192).

The application of the answer theory to knowledge-how has been subject to a good deal of criticism, focusing on whether it is the correct general account of knowledge-wh (Brogaard, 2009; Farkas, 2016; George, 2013; Masto, 2010; Parent, 2014; Schaffer, 2007), whether the linguistic evidence supports applying the answer theory to knowledge-how (Habgood-Coote, 2018; Roberts, 2009), and whether linguistic evidence is a legitimate source of evidence on philosophical issues (Brown, 2013; Devitt, 2011; Noë, 2005). My focus will be on the philosophical success of the account of knowledge-how suggested by the answer theory, and I will assume both that linguistic theory is relevant to the nature of knowledge-how and that ANS is the best linguistic account of knowledge-wh ascriptions.

We can use the answer theory to understand the nature of knowledge-how by giving an account of the semantics of an embedded interrogative phrase like "how to swim?"[8] This gives us the following schematic account of knowledge-how:

> ANSWER THEORY$_{\text{HOW}}$: *S* knows how to *V* iff *S* knows that *p*, and *p* answers the question *how to V?*

Stanley and Williamson (2001) point out that there are several ambiguities in *how to V?* questions, stemming from: (a) the unpronounced pronoun (PRO), which can either refer to the subject of the verb or take a "one"-type reading; (b) the different modalities associated with the infinitival phrase; and (c) whether the interrogative takes a mention-*all* or mention-*some* reading. They claim that practical knowledge-ascribing sentences involve controlled PRO, and an ability-type modal, because deontic and "one"-type readings are obviously propositional (Stanley and Williamson, 2001, pp. 422–425). They also make an appeal to communicative purpose to claim that the default reading of know-how ascriptions is the mention-*some* reading (Stanley and Williamson, 2001, p. 426).[9]

This yields the following account of knowledge-how:

> ANSWER THEORY$_{\text{HOW/SW}}$: *S* knows how to *V* iff *S* knows *p*, and *p* provides one answer to the question: *how can S V?*

All that remains is giving an account of "how." Question-words are associated with domain restrictions: "where" to places, "why" to reasons, "who" to people, and so on. The general category of how-questions is associated with propositions about *ways.* These might be ways of looking ("how did she look?"), ways of being ("how is your brother?"), or the way in which something happened ("how did the fire start?"). The infinitival how-questions we are interested in concern *ways of acting.* When I ask "do you know how to get to Edinburgh?", I want a proposition that provides me with a way of acting such that, if I employ it I will get to Edinburgh.

To fully characterise the ways of acting that figure in knowledge-how, we need the further distinction between *methods* and *manners.* To see this distinction, consider the following line from Liberace in *Behind the Candelabra* (Soderbergh, 2013):

> You know, I always get asked: How do you play the piano with all those rings on your fingers? And I always tell them: very well, indeed.[10]

[8] "How to swim?" can sound odd as a standalone question, except if asked rhetorically. However, this construction is available in other languages. In French, it is acceptable to ask "Comment nager?".

[9] These arguments don't seem especially strong, and Stanley is happy to allow that some ascriptions have: uncontrolled PRO, a more complex modal, and a mention-all reading (see 2011 p. 126–128, 183). Some knowledge-how ascriptions also may involve a deontic reading (D. G. Brown, 1970; Bhatt, 2006).

[10] Thanks to Mark Bowker for this example. See also (Jaworski, 2009, p. 34).

The question *how do you play the piano with all those rings on your fingers?* is intended to raise the issue of what adjustments to his technique Liberace needs to make in order to play the piano with so many rings on. The joke lies in Liberace deliberately misinterpreting the question as concerning the manner of his playing.[11] Manners are features of actions and are associated with adverbs like "slowly," "carefully", and "gracefully." By contrast, methods are more like instructions and are associated with the by-gerund construction, as in "by lifting from the knees." I will rely on an intuitive sense of this distinction, leaving space to substitute in a more developed theory (see Jaworski, 2009; Sæbø, 2016).

Manners do not figure in practical knowledge ascriptions (except in cases with a deontic reading, see §4.3). Knowing that I can open the door *gracefully* is not sufficient for knowing how to open the door. I need to know a method proposition, like: *that I can open the door by jiggling the key in the lock.* On Stanley and Williamson's semantics, a how-to question will be answered by a proposition expressing a modal relation between the agent, the embedded verb, and a method. The question *how to swim?* will be answered by a proposition like *S can swim by moving her arms and legs in the water.*

As ways of acting are picked out by adverbial phrases, we can get an account of them from an account of the meaning of adverbs (Stanley, 2011, p. 58; Stanley & Williamson, 2001, pp. 427–428). According to the standard Davidsonian account, adverbs are predicates, expressing properties of actions (Davidson, 1967; Parsons, 1990, 1995).[12] A sentence like "Jane swam carefully" predicates of an event of Jane's swimming the property of being careful. This means that the question *how did Jane swim?* is answered by a proposition that characterises Jane's act of swimming under a contextually appropriate adverb, for example, *Jane swam sloppily.* If adverbs are predicates of actions, then the relevant ways of acting will be properties of actions, or way-*types.*

Putting together $\text{ANS}_{\text{HOW/SW}}$ with the method/manner distinction and the Davidsonian account of adverbs gives us the following account of knowledge-how:

> INTELLECTUALISM: *S* knows how to *V* iff *S* knows that some method *M* is a way in which she can *V*.

This is by no means Stanley and Williamson's complete account: they also address the Practicality problem by claiming that know-how involves a PMP. Stanley & Williamson (2001, pp. 428–30) and Stanley (2011) makes several adjustments to the view. For the moment, let's bracket these complications, taking INTELLECTUALISM to encapsulate the central commitments of linguistically motivated intellectualism.

3 | GENERALITY PROBLEMS

A generality problem has three basic elements: (a) that an account appeals to types, (b) that there are types at different levels of generality that can be substituted into this account, and (c) that the available types differ in whether they are sufficient for the phenomenon being analysed. The problem arises when an account cannot distinguish types that are relevant for the phenomena at issue from those that are irrelevant. This problem is an extremely general one. Any philosophical analysis that appeals to types runs the risk that the account will not have the theoretical resources to determine which types instantiated by an object are relevant for the phenomenon in question.

[11] This distinction is noted by (D. G. Brown, 1970, pp. 239–340; White, 1982, pp. 22–23; Cross, 1991, p. 248). Elizabeth Fricker informs me that Gareth Evans also stressed this distinction in lectures on modes of presentation.

[12] I am bracketing Davidson's commitment to the claim that actions are events (Hornsby, 2013; Steward, 2012). The main alternative to the Davidsonian semantics is to treat adverbs as predicate modifiers (Thomason & Stalnaker, 1973). The difference between these views is not significant for our purposes.

3.1 | The generality problem for reliabilism

Let's consider how the generality problem gets going in the case of reliabilism (Conee & Feldman, 1998; Goldman, 1979). Process reliabilists analyse the justification of a belief in terms of the reliability of the method by which the belief was formed, endorsing:

> RELIABILISM: *S* is justified in believing *p* iff *S*'s belief that *p* was produced by a reliable process.

How should we understand what it is to be a reliable process? Intuitively, belief-forming process-types are the bearers of reliability. A reliable process is one that *tends* to deliver the goods, but token-processes are unrepeatable, making it difficult to make sense of their tendencies. This pushes the Reliabilist towards saying that a belief is justified just in case the token process that led to the formation of that belief instantiates a *type* that is suitably reliable. At this point, the generality problem gets going as a token belief-forming process will instantiate an indefinite number of process-types that vary in their reliability.[13] When I glance out of the window and form the belief that there is a bird outside, the process instantiates the type *forming beliefs based on perception* but also the type *forming beliefs based on perception about objects behind solid barriers.* While the first is reliable, the second is not. It is not at all obvious which type determines the justification of my belief.

The generality problem for reliabilism is the challenge of giving an account of which belief-forming process-type(s) instantiated by a process-token is relevant for the reliability of the belief produced by that process. This problem is serious: without an account of relevant process-types, reliabilism is radically incomplete, unable to determine whether a belief is reliable or not (Conee & Feldman, 1998, p. 3).

There are three core strategies for addressing this problem (Conee & Feldman, 1998; Goldman & Beddor, 2015):

i) Give an account of which process-types are relevant for assessing the reliability of a belief, either by appealing to common sense (Goldman, 1979) or scientific classifications (Alston, 1995);
ii) Reformulate the theory so that it doesn't appeal to types, instead appealing to tokens (Comesaña, 2006, pp. 28–30) or collections of types (Wunderlich, 2003);
iii) Appeal to contextual mechanisms to select a process-type (Heller, 1995).

The mere fact of being faced with a generality problem does not mean that an analysis is untenable: there might well be a satisfactory account of which types are relevant. Conee and Feldman offer three criteria on an account of relevant types (Conee and Feldman 1998, p. 4), which naturally generalise. First, they point out that a response to a generality problem ought to provide a *principled* selection criterion for types. Secondly, the response must provide *defensible predictions* about the target phenomenon. Thirdly, the account of which types are relevant must appeal *only* to the theoretical resources of the original theory, without illicitly relying on concepts from opposing theories. It would be a failure for reliabilism if it was only possible to pick out relevant types by appealing to evidentialist notions.

To definitively establish that there is no satisfactory response to a generality problem, one would need to consider *all* potential responses. This would be laborious, so I will follow Conee and Feldman in considering only those responses that seem promising (Conee and Feldman, 1998, pp. 5–6). Establishing

[13] It may also not be obvious which process caused the belief (Weatherson, 2012).

that these responses are unsatisfactory won't conclusively demonstrate that intellectualism is untenable, but it will shift the dialectical burden onto intellectualists to give an account of relevant way-types.

3.2 | The generality problem for intellectualism

With the structure of a generality problem on the table, we can explore the analogous problem for intellectualism. We have already established (a) that intellectualism appeals to types in the form of ways of acting. To establish a generality problem, we need to also show (b) that there are many way-types that can be substituted into the account and (c) that at least some of these types are such that knowing that they are a way in which one can V does not suffice for knowledge how to V.

INTELLECTUALISM is compatible with propositions of variable granularity figuring in the analysis (Fridland, 2013). The granularity of these propositions can be traced back to the level of generality of the ways of acting. If the ways of acting that figure in the account are very general, then the propositions that figure in know-how will be coarse-grained, and if the ways of acting are more specific, then the propositions will be more fine-grained.[14] The variable generality of ways of acting means that it is easy to generate many way-propositions associated with any given activity. Imagine watching someone swim up and down in a pool. What answers to the question *how are they swimming?* could one give? Even restricting our attention to methods, there is still a huge number of answers. One could say that they are swimming: *by employing the backstroke*, *by cutting their arms through the water and scissoring their legs*, *by keeping their back straight*, *by moving about in the water,* and so on. All these methods are candidates to figure in the proposition *M is a way for the swimmer to swim* as each of them is a way that the swimmer can employ in order to swim. Any competent swimmer will know many of these facts, meaning that they are all candidates for being identified with knowledge-how.

Why does the existence of many propositions about ways of V-ing pose a problem for intellectualism? One issue is that INTELLECTUALISM claims that knowledge how to V is identical with knowledge of *one* way-fact about V-ing, but the swimmer example suggests that there will be many way-facts known by an agent who knows how to do something. This raises the question of which piece of propositional knowledge about swimming knowing how to swim is supposed to be identical to. Although this is an interesting issue, it does not get us to a generality problem. The real problem arises from the fact that knowledge of some of these way-propositions is not sufficient for knowledge how to V. *Moving about in the water* is certainly a method for swimming (in a suitably broad sense of "method" and "swimming"), but someone who only knows that *moving about in the water* was a way to swim *does not* know how to swim. *Blowing into the mouthpiece and moving one's fingers* is a way to play the flute, but someone who only knows that *blowing into the mouthpiece and moving one's fingers i*s a way to play the flute *does not* know how to play the flute.[15]

To illustrate how this leads to sufficiency problems, consider Hornsby's touch-typing example (2011, p. 91). Jim is a touch-typing novice who is typing out "Afghanistan" again and again (he's heard it is a good word to practice). Through practice, Jim has mastered typing this word so that the method that he employs in typing is identical to that which a skilled touch-typist would use.

[14] Fridland argues that the variable granularity of these propositions points to a problem for intellectualism, since neither finely nor coarsely individuated propositions can explain the role of knowledge-how in guiding intelligent action (Fridland, 2013, pp. 884–891). I am sympathetic the worry, but it is distinct to the issue I am pursuing, which concerns how an intellectualist is to fix which propositions figure in the object of knowledge-how.

[15] This example comes from Monty Python's "How to do it" sketch (for discussion, see Schaffer, 2007, n. 21). It might be possible to set up conversational contexts in which these propositions do answer the contextually relevant questions (see §4.4). However, the knowledge expressed in these contexts would not be practical knowledge.

However, he has yet to tackle any other words. Jim knows various facts about touch-typing. He knows that typing "A-F-G-H-A-N-I-S-T-A-N" with the right fingers is a way to touch-type the word "Afghanistan." This knowledge can be identified with Jim's knowing *how to touch-type* "*Afghanistan.*" However, Jim also knows that typing "A-F-G-H-A-N-I-S-T-A-N" with the right fingers is a way to touch-type. That's why he is practicing by typing that word. This means that he also fulfils the conditions given by INTELLECTUALISM for knowing *how to touch-type.* The crucial point is that although Jim knows how to touch-type the word "Afghanistan," he does not know how to touch-type.[16] Whereas knowing that tapping out "A-F-G-H-A-N-I-S-T-A-N" with the right fingers is a way to touch-type "Afghanistan" seems sufficient for knowing how to type "Afghanistan," knowing that the very same method is a way to touch-type does not suffice for knowing how to touch-type. In many cases, possession of some general piece of know-how requires mastery of various methods. Knowledge of a fact about just one of the methods may not be sufficient for possession of the general piece of know-how, although it might be sufficient for a more specific piece of knowledge-how.

We can now see that intellectualism provides all the elements of a generality problem. The basic commitments of the account include an appeal to way-types. The swimming example demonstrates how easy it is to generate many propositions of the relevant kind about any given activity. And the sufficiency problem emerges when we notice that many propositions of the form *M is a way to V* are such that knowledge of them is not sufficient for knowing how to V, as the examples of swimming, flute-playing, and touch-typing show.

What does the intellectualist need to do to resolve this problem? Following Conee and Feldman's criteria, the intellectualist needs to have a principled selection criterion that matches up pieces of know-how with ways of acting at the appropriate level of generality.[17] This selection criteria need to get the cases right concerning who knows how to do what and needs to avoid appealing to the theoretical resources of opposing theories. Although it would be unreasonable to demand that the intellectualist provide us with an account of how people swim (this is a question for physiologists, or sports scientists), they ought to be able to provide us with plausible criteria for selecting which kinds of propositions about swimming are of the right kind for knowing how to swim.

4 | RESPONSES TO THE GENERALITY PROBLEM

We can get started on responses to the generality problem for intellectualism by considering the responses in the case of reliabilism.[18] This suggests the following responses:

i) Give an account of which ways of acting are relevant for possessing knowledge-how by appealing to common-sense or empirical science;
ii) Reformulate INTELLECTUALISM so that it doesn't appeal to way-types;
iii) Appeal to contextual mechanisms to select relevant ways of acting.

[16] Perhaps the meaning of "touch-typing" can be modulated to become less demanding, meaning that in some contexts, Jim counts as knowing how to touch-type. If this is right, we should focus on contexts where "touch-typing" takes a demanding reading. Thanks to Andrew Peet for this point.

[17] Above, I focus on overly narrow ways of acting, but in Section 3.6., we will consider examples of overly general ways.

[18] Stanley and Williamson (2001) and (Stanley (2011)) explore several of these moves. I will introduce these refinements to INTELLECTUALISM piecemeal to avoid overwhelming the reader with exegesis.

There are also a couple of responses that do not have a clear analogue:

iv) Appeal to PMPs to select relevant ways of acting;
v) Adjust the account of the modality associated with knowledge-how to pick out only methods with a certain modal profile;
vi) Appeal to the idea that methods need to be *effective*, in the sense in which an algorithm is effective.

I will consider these responses in turn. Although I make no claim to exhaust the potential responses, the parallel with reliabilism suggests that these are the most plausible responses to the problem, meaning that their failure is bad news for the intellectualist.

4.1 | Relevant ways of acting

The simplest solution would to be to appeal to a natural division amongst methods for V-ing between those that are and are not relevant for knowledge-how. As in the case of reliabilism, there are two versions of this strategy: appealing to common sense and appealing to empirical science. I think appealing to common-sense types is a non-starter. All the ways of acting that I considered in §3.2. are common-sense, and this didn't stop them from posing counterexamples to the intellectualist account.

Appealing to empirical science is more promising. The idea would be that inquiry in cognitive science might provide us with an account of the methods that underlie our ordinary activities that the intellectualist can slot into their account of knowledge-how. This gives the following account of relevant ways of acting:

> SCIENCE: The method that figures in an agent's knowledge how to *V* is the method for *V*-ing that figures in the best scientific explanation of that agent's successfully *V*-ing.

The intellectualist who pursues this line can point to some apparent empirical successes. For example, one might understand research into the neural basis of grasping actions (Milner & Goodale, 2013) as giving an account of the methods underlying grasping. A detailed assessment of this response would require looking in depth at the empirical literature, but there are a couple of reasons to be sceptical. For starters, it is not obvious that empirical inquiry into methods will yield just one uniquely best explanation of successful activity. It might turn out that there are several equally good explanations at different levels of description (Conee & Feldman, 1998, pp. 17–18). A further issue is that it is not obvious that scientific inquiry will deliver methods that we can claim to *know*. Psychological explanation might take place entirely at the sub-personal level without positing personal-level states (as with Milner and Goodale's explanation of grasping: see Drayson, 2012, pp. 14–15). In summary, although there may be some mileage in appealing to empirical strategy, this strategy relies on empirical inquiry delivering methods at the personal level that are in line with the intellectualist's theoretical goals.

4.2 | Appeal to sets of propositions

INTELLECTUALISM identifies a piece of knowledge-how with knowledge of just one proposition. However, there is nothing about the intellectualist view that requires matching up pieces of knowledge-

how one to one with pieces of propositional knowledge. Stanley exploits this fact in discussing the connection between know-how and skill:

> When we say that a skilled outfielder knows how to field a fly ball, we do not mean that he knows, of at least one way to field a fly ball, that it gives him counterfactual success in fielding fly balls. That is, we do not intend the *mention-some* reading of the embedded question, "how to field a fly ball". Rather, in such a case, we mean the mention-all reading of the embedded question. What we assert when we assert of a skilled outfielder that he knows how to field fly balls is that he knows *all* of a range of relevant ways that give him counterfactual success in fielding fly balls. (Stanley, 2011, p. 183).

Here, Stanley suggests that some knowledge-how relates to sets of propositions, leading to:

> INTELLECTUALISM 1: *S* knows how to *V* iff for all methods in some set {*M1*, *M2* …} *S* knows that *Mn* is a way in which she can *V*.

This move is analogous to Wunderlich's response to the generality problem for reliabilism, which offers an account of reliability in terms of *all* the process-types instantiated by a token process (Wunderlich, 2003).[19]

Thinking of knowledge-how as relating to a set of way-propositions removes the burden of finding just one relevant proposition, but it doesn't solve the generality problem. Consider a twist on the Jim case where Jim has learnt how to touch-type all words beginning with the letter "A" but no other words. He now knows a bunch of propositions that answer the question *how can I touch-type?*, but he still does not know how to touch-type. Instead of the problem of matching up pieces of know-how with single propositions, INTELLECTUALISM 1 faces the problem of matching up pieces of know-how with *sets* of propositions. This requires specifying both the level of generality of the ways that figure in these propositions and how many of them must be known.

4.3 | Contextualism

A Reliabilist might reject the demand for an account of which process-types determine reliability, claiming that conversational context selects relevant process types (Heller, 1995). Similarly, an intellectualist might reject the demand for an account of relevant methods, claiming that conversational context determines which ways of acting are relevant. This response naturally goes together with a contextualist account of interrogatives, which claims that which question expressed by an interrogative depends on conversational context. There is a good amount of evidence for this view. For example, the sentence:

1) What caused the Second World War?

plausibly expresses different questions when uttered in the pub and when uttered in a history exam. In an everyday context, a response can be a general proposition, whereas in a history exam, a detailed and specific proposition is called for. A natural way to accommodate this data is to offer a context-sensitive semantics for interrogative phrases, which claims that the question expressed by an interrogative (and the corresponding answers) depends on the context.[20] Given the connection

[19] Another option would be to claim that know-how is knowledge about way-*tokens*. For this move in the reliabilism debate see Comesaña, 2006, pp. 28–30. This view is implausible because it cannot account for the idea that knowledge-how is a kind of general knowledge.

[20] Contextualism about the question expressed is only one option. One could also claim that the answering relation is context-sensitive (Boër & Lycan, 1986), or one could appeal to warranted assertibility, claiming that asserting many of the true answers to a question will give rise to misleading implicatures. I will restrict my attention to contextualism about the question expressed in the main text, although what I say carries over to these other options.

between embedded and unembedded interrogatives established by the Answer theory, contextualism about interrogatives entails contextualism about "knows-wh" ascriptions. Whereas the established debate about epistemic contextualism focuses on the context sensitivity of the relation expressed by "knows" (Cohen, 1986; DeRose, 2009; Lewis, 1996), this view yields a kind of contextualism about *what is known.*[21]

A contextualist about knowledge-how might respond to the generality problem by claiming that contextual mechanisms will select which way-types are relevant for a knowledge ascription made in a given context. Here's a toy example of how this might work. Suppose I utter the sentence:

2) Ruth knows how to get to London

in a context in which we are deciding who should *drive* us there. By the contextualist's lights, our conversational goal might well trigger a modulation of the meaning of the interrogative, such that the question expressed is something like *how can one drive to London?* If this modulation occurs, then the answers that are relevant to the knowledge ascription will concern ways of getting to London *by driving*, meaning that (2) will come out false if Ruth only knows a way to get to London by train. In short, the modulation in the meaning of the interrogative leads to a corresponding restriction in which way-propositions can figure in the knowledge-how ascriptions.

The case for contextualism about interrogatives seems pretty compelling. However, to show that context can fix to the generality problem, the intellectualist needs to offer a more developed theory. One option is to appeal to general contextual mechanisms in interrogatives. There are two salient options:

i) Interrogatives are associated with a domain restriction to a contextually salient set of objects (Stanley, 2011, pp. 56–8, 118).
ii) The meaning of an interrogative phrase is affected by the interests and purposes of conversational participants (Boër & Lycan, 1986).[22]

These are plausible as accounts of the context-sensitivity in "knows-wh" ascriptions, but they won't help solve the generality problem. Both mechanisms place general restrictions on the ways of acting that can figure in a conversational context. However, we can make know-how ascriptions at different levels of generality in the *same* conversational context. Consider the following sentence said about Jim from Hornsby's touch-typing example:

3) Jim knows how to touch-type "Afghanistan," but he doesn't know how to touch-type.

Both conjuncts in this sentence are true. In order for the first half of the sentence to come out true, there better be some contextual mechanism that means that only relevant ways of touch-typing "Afghanistan" can figure as answers to the question *how can Jim touch-type "Afghanistan"?*, ruling out answers like "by using his fingers." The problem is that if a way of touch-typing "Afghanistan" is available in the context, it will also figure in an answer to the question *how can Jim touch-type?* (assuming that there isn't a mid-sentence context shift). This entails that

[21] The options discussed in footnote 20 carry over to embedded interrogatives. For discussion of warranted assertibility manoeuvres for knowledge-wh ascriptions, see (Braun, 2006, 2011; DeRose, 2009, pp. 69–79; Hawley, 2003, p. 22).

[22] This isn't quite Boër and Lycan's view: in their view, the answerhood relation is context-sensitive (Parent, 2014, n. 29) (see footnote 20). See also (Ginzburg, 1995a, 1995b, 2011).

the second conjunct is false as Jim does know a way to touch-type that is available in the context. The fact that we can switch between narrow and general know-how ascriptions in the same context suggests that general mechanisms of contextual sensitivity cannot resolve the generality problem.

The contextualist might instead focus on context dependence in the meaning of "how to" questions. There are three options here:

i) That the "can" modal takes a contextually supplied set of worlds as its modal base (Stanley, 2011, pp. 126–127);
ii) That knowledge-how ascriptions are associated with an unpronounced *task* variable filled out by context (Hawley, 2003, pp. 21–22);
iii) That infinitival knows-wh ascriptions involve context-sensitive goal-oriented *bouletic* modality, where goals are supplied by context (Bhatt, 2006, pp. 117–158).[23]

We'll return to Stanley's view below (see §5.5), so for now, let's focus on Hawley's and Bhatt's accounts.

Hawley suggests that the interrogative in knowledge-how ascriptions involves an unpronounced task variable that gets filled out by context, where tasks can pick out both V-ing in certain kinds of environment (driving on snow) or more specific kinds of V-ing (driving a manual car) (Hawley, 2003, pp. 21–22; Cath, 2015, n. 14). This yields the following account of knowledge-how:

> INTELLECTUALISM 2: "S knows how to *V"* is true in a context C iff for all of a contextually salient set of sub-tasks of *V*-ing {*t1*, *t2*, …} S knows that some method *M* is a way in which she can perform task *tn.*

This view can explain the truth of (3) as it will posit two different task-variables associated with the two conjuncts in the sentence. Suppose that context provides us with one set of tasks associated with *touch-typing "Afghanistan,"* and another larger set of tasks associated with *touch-typing*. Jim might have knowledge about how to perform the tasks associated with one activity but not the tasks associated with the other.

This might be a plausible account of knowledge-how. However, to take the sting out of the generality problem, it needs to be the case that for every knowledge-how ascription, contextual mechanisms winnow down the possible answers to *how to V?* to yield a set of answers such that knowledge of them (individually or jointly) is sufficient for knowledge-how to V. Although we have evidence that context affects the meaning of knowledge-how ascriptions, it would surely be a coincidence if contextual mechanisms restricted the meaning of interrogatives in just the way that intellectualists need (see: Conee & Feldman, 1998, pp. 20–24).

For Bhatt, infinitival knowledge-wh ascriptions are associated with a complex bouletic (i.e., goal-oriented) modal that can express either a *circumstantial can* (V is possible given the way the world is) or a *bouletic should* (V is a/the way to satisfy one's goals) depending on context.

Bhatt suggests that the "can" reading is the default for knowledge-how ascriptions (2006, p. 122), in which case his account yields a semantic value close to INTELLECTUALISM. However, he notes that in cases where there is a contextually salient goal, a "should" reading is available (2006, p. 125). To see this reading, consider a context where the goal is to solve

[23] Thanks to an anonymous reviewer for suggesting the relevance of Bhatt's view.

the problem without violating any social norms. In such a case, the correct paraphrase of a sentence like:

4) Magnus knows how to solve this problem

is deontic, yielding something like:

5) Magnus knows how he *should* solve this problem in order to avoid violating social norms

According to Bhatt, we should understand (4) as saying (roughly) that Magnus S knows (i) that some way w is a way in which he can solve the problem and (ii) that employing this way will satisfy the contextually salient goals. Bhatt nicely shows how one can derive both the "can" and "should" readings from one underlying modal. In cases where there is a salient goal, that goal slots into condition (ii) giving a deontic reading like (5). And in cases where there is no salient goal, Bhatt introduces a *trivial* goal—like *solving the problem*—which leads to (ii) being trivially satisfied. In these cases, the circumstantial modal in (i) is salient, leading to a "can" reading.

For our purposes, the crucial point is that contextually supplied goals can restrict the level of generality of answers: if our goal is to touch-type a manuscript accurately at a speed of at least 60 words per minute, to count as knowing how to touch-type, Jim better know a way that satisfies this goal. This means that according to Bhatt's account, the relevant ways of acting are just those that lead to the fulfilment of salient goals.

Bhatt's account can fix the generality of ways of acting when there are contextually salient goals. However, it is a feature of Bhatt's account that rich contextual goals only play a role in the "should" reading. This means that his account cannot solve the generality problem for ascriptions with a "can" reading, which (as Bhatt observes) appears to be most knowledge-how ascriptions. Even for the "should" reading, it is a substantial linguistic claim that conversational context will provide salient goals that are sufficiently rich to resolve the generality problem. As with Hawley's account, it would be a coincidence if conversational context happened to always provide salient goals that fixed the level of generality of ways of acting to the appropriate level. Both Hawley and Bhatt provide plausible accounts of the context sensitivity of knowledge-how ascriptions: the problems comes from pushing the explanation of the generality of methods out onto context as it seems insufficiently rich to do the explanatory work.

4.4 | Practical modes of presentation

I now want to consider a move specific to intellectualism: appealing to practical modes of presentation (PMPs). In this section, I will assume that PMPs are legitimate, aiming to establish that even if PMPs are genuine, they cannot solve the generality problem. The goal is to demonstrate the distinctness of the practicality and generality problems.

Let's consider a simple way to use PMPs to restrict ways of acting.[24] We might think that relevant methods must be thought about in a practical way:

> PRACTICAL THOUGHT: The method that figures in an agent's knowledge how to *V* is the method of *V*-ing that she thinks about in a practical way.

[24] Throughout this section, I will employ a Russellian framework for thinking about PMPS (See footnote 3).

There is some plausibility to this proposal. One might think that it is part of the idea of a practical way of thinking that it homes in on the method for V-ing that an agent is in fact employing in her V-ing.[25]

One issue is that it is an oversimplification to think that an agent who knows how to do something will think of only one way of doing that activity in a practical way. A swimmer will typically have mastered several different strokes, meaning that by the intellectualist's lights, they will think about various way-propositions in a practical way. In response to this, an intellectualist might identify knowledge-how with a body of propositional knowledge thought about in a practical way.

A more serious problem stems from the fact that we can generate cases where an agent thinks about an *irrelevant* way of acting in a practical way. Recall that knowing that *moving about in the water is a way to swim* is not sufficient for knowing how to swim. On the view under consideration, the explanation for this is that someone who doesn't know how to swim will not think about the proposition *moving about in the water is a way for me to swim* in a practical way. However, there are cases in which agents who do not know how to swim think about this proposition in a practical way. Consider an agent who knows how to splash people around her in virtue of knowing that *moving about in the water* is a way to splash people around you. According to PRACTICAL THOUGHT, such an agent had better be acquainted with *moving about in the water* in a practical way. However, once the agent thinks of this method in a practical way, the explanation of her ignorance about how to swim cannot be that she does not think about *moving about in the water* in a practical way.

This example helps us to see the distinctness of the practicality and generality problems. A solution to the generality problem requires a way to relate pieces of know-how to ways of acting at the relevant level of generality, whereas a solution to the practicality problem requires a restriction amongst way-propositions to those known in a relevantly practical way. Even if we had a satisfactory account of the species of proposition that are relevantly practical, there would remain a question about how to match up pieces of know-how with practical propositions.

A different way to put PMPs to work is to rely on their connection with *de re* thought. In Stanley's view, knowledge-how is a kind of *de re* knowledge (2011, p. 120), and Stanley and Williamson in several places claim that the standard way of expressing knowledge-how will be by employing demonstratives of the form: "*this* is a way for me to V" (Stanley & Williamson, 2001, p. 433; Stanley, 2011, pp. 161–162). Because ways of acting are types, Stanley and Williamson claim that these demonstratives function as a kind of *deferred ostension*, in which pointing to an object that instantiates a type secures reference to that type itself (2001, n. 29). This suggests the following restriction to ways:

> DEMONSTRATIVE THOUGHT: The method that figures in an agent's knowledge how to *V* is the one that she refers to via sentences (and thoughts) of the form "*this* is a way for me to *V*."

The issue is that it isn't obvious that this kind of demonstrative actually secures reference. In the case of pointing at oneself engaging in some activity, there will be a huge number of ways of acting instantiated, and it is not obvious that any one of those types is referred to. If I point at myself cycling saying "*this* is a way for me to cycle," a hearer would be confused, presumably because my speech act has failed to secure reference to a single type.[26] There are instances of successful deferred ostension to types in ordinary language, but I suspect that they are special cases, in which context is

[25] Pavese (2015b) presents a richer account on PMPs. For more on Pavese's account, see §4.6. See Bianchi (n.d.) for another way to develop the notion of a way of acting to address the practicality problem.

[26] (Hornsby, 2011, p. 91; Wiggins, 2012, pp. 120–121). See Brown (1998) for a related problem about references to natural kinds.

rich enough to resolve under-determination. As with contextualism, the appeal to demonstratives transforms the generality problem into a linguistic problem, but as it is not obvious that demonstratives in the relevant cases secure reference, this move doesn't get any traction on the philosophical issue.

4.5 | Counterfactual success condition

INTELLECTUALISM involves propositions with a "can"-type modal force, which says of a way of acting that it is a way in which the agent *can* engage in some activity. However, an intellectualist might offer a stronger modal condition on ways of acting, saying that it is essential to the idea of a method that they lead to reliable success.

Stanley (2011) pursues this line, taking up Hawley's claim that knowledge-how is related to counterfactual success rather than simple ability (Hawley, 2003; Stanley, 2011, pp. 126–128). On this view, the propositions relevant to knowledge-how claim that a method is a way in which the agent can perform some task in all of a contextually salient set of normal worlds, giving the following account of knowledge-how:

> INTELLECTUALISM 3: S knows how to *V* iff S knows that that some method *M* is a way in which she could *V* in all (or at least most) of a contextually salient set of normal worlds.

As a side note, as this account appeals to a contextual mechanism to specify the relevant set of worlds, it is open to the criticism from the last section: that it is not obvious that context will deliver what the intellectualist needs (i.e., a generality-fixing set of worlds).

One issue faced by leaning on modal properties is that just as it is difficult to pick out the modal properties of a kind of ability that goes along with knowledge-how (Bengson & Moffett, 2011a), it is difficult to give an account of the modal properties of the ways to V known by someone who knows how to V. A weak "can"-type modal allows ways of acting that are only occasionally successful, leading to too many people knowing how. By contrast, a strong reliability condition risks ruling out ways of acting that are sufficient for knowledge-how but occasionally lead to failure (Hawley, 2003, p. 24). I don't have an argument that there is no way to pick out suitable modal properties, but giving an account of these properties is a difficult task.

A further issue concerns trivial ways of acting. Strengthening the modal condition on ways places a lower bound on the generality of the ways of acting that can figure in the object of knowledge-how, but it does not place an upper bound. In the limit case, the intellectualist needs to be able to explain why trivial methods do not suffice for knowledge-how. For example, *by swimming* is an extremely reliable way to swim, securing success at swimming in all the worlds in which swimming is possible.[27] But someone who knows only *that swimming is a way to swim* doesn't count as knowing how to swim. A strengthened modal condition cannot explain why trivial way-propositions do not suffice for knowledge-how as a trivial way is maximally reliable.

There are two options to deal with the problem of trivial ways. Intellectualists might claim that this trivial knowledge isn't sufficient for knowing how to swim because it is not possible to think about the proposition *swimming is a way to swim* in a practical way. The need to lean on PMPs

[27] Is *by swimming* a way to swim? If someone asked "how can you swim?", you wouldn't answer by saying "by swimming", presumably because this is an unhelpful answer. However, *by swimming* certainly is a way of acting: one can answer the question "how are you going to get across the river?" by saying "by swimming."

would tell us that strengthening the modal condition cannot by itself solve the generality problem, raising the question of why one cannot think of trivial propositions practically. Alternatively, intellectualists might bite the bullet and claim that trivial knowledge can be sufficient for having knowledge-how but only when the trivial proposition is thought of practically.[28] This view is unattractive. For one thing, it requires having an explanatorily adequate account of PMPs. Furthermore, this view runs the risk of making the content of knowledge-how irrelevant. If we can explain someone's intelligent action by appealing to their practical knowledge of a trivial proposition, then the mode of presentation must be doing all the work of explaining the intelligence of that action. If PMPs do all the explanatory work in these trivial cases, one might worry that modes of presentation will also fully explain intelligent action in cases of non-trivial propositions. This belies the role played by the propositions in explaining intelligent action. When my trumpet teacher tells me to focus on not putting pressure on my mouthpiece, the obvious way to explain the improvement in my performance is by appealing to the content of the propositions I have learnt.

4.6 | Effective methods

Thus far, I have focused on Stanley and Williamson's intellectualism. However, comments about ways of acting in Stanley and Williamson (2001) and Stanley (2011) are sparse, and one might think that the problem is just that intellectualists haven't said enough about what ways of acting are. In this section, I will address this by discussing Pavese's version of intellectualism (Pavese, 2015a, 2015b, 2017), which includes a much more developed discussion of ways of acting. I will focus on her claim that the methods that figure in knowledge-how must be *effective* and consider whether this restriction can resolve the generality problem.[29]

Pavese discusses ways of acting in "Practical Senses" (2015b). The primary goal of that paper is to rehabilitate PMPs through an analogy between practical senses and computer programmes.[30] Although the primary purpose of this analogy is plausibly to resolve the Practicality problem—which I argued in §4.4 is distinct to the generality problem—the analogy is extremely rich, and suggests that the methods which figure in knowledge-how need to be effective. Pavese's analogy suggests parallels between: (a) activities and functions, (b) methods and algorithms, and (c) practical senses and programmes. We are to think of the activity (in Pavese's terminology tasks) involved in a practical sense as analogous to the *function* computed by a programme. For example, a task like making an espresso would be modelled as a function that takes a espresso-making situations as inputs and outputs successful events (or sets of events) of espresso-making. Building on this understanding of tasks, Pavese thinks of methods on analogy with algorithms. An algorithm is a way to break down a task into a set of (possibly non-sequential) ordered steps. A method for making an espresso will break the task of *making an espresso* down into simpler tasks, like *grinding the coffee*, *turning the machine on,* and *weighing the coffee.*

It is standard in computer science to think of algorithms as effective methods for performing a task. Pavese follows this idea, suggesting that the ways involved in ordinary knowledge-how will be effective (for some exceptions, see [Pavese, 2015b, pp. 12–13]). To be effective, an algorithm needs to be:

[28] See Pavese (2015b, pp. 14–16), Sosa (2010, p. 45).

[29] Thanks to an anonymous reviewer for this suggestion.

[30] Pavese is a Fregean about PMPs (2015b, p. 2), and in this section, I will switch to Fregean formulations for talking about PMPs (see footnote 3).

i) *Complete,* yielding a result for each one of the relevant class of inputs for the task;
ii) *Reliable,* with every result of the method being one of the successful outputs;
iii) *Finite,* meaning that the algorithm consists of a finite number of instructions, yielding a result after performing a finite number of steps.

Pavese also claims that practical senses involve implementable methods, meaning that the tasks involved in the algorithm are ones that the agent has a capacity to do in the sense of being able to do them *if given an instruction* (Pavese, 2015b, pp. 9–10).

The final element in the analogy is the claim that practical senses are to methods what programmes are to algorithms. Pavese claims that the programme–algorithm relation is an instance of the sense–referent relation, in that programmes are abstract, non-linguistic, mind-independent entities that determine their referents, stand in a many–one relation to their referents, and are ways of thinking of their referents (Pavese, 2015b, pp. 2–9). This means that strictly speaking her account of practical senses is not based on an analogy between programmes and practical senses but a generalisation from species (program–algorithm) to genus (sense–referent). This part of the analogy addresses the Practicality problem, so we can put it to one side.

The algorithm–method analogy suggests the following restriction on ways of acting:

> EFFECTIVE: The method which figures in an agent's knowledge how to V is a method for V-ing which is *effective* (in the sense of being complete, reliable, and finite) and *implementable* for that agent, given her practical capacities.[31]

To get a generality problem going, we need to demonstrate that:

i) Methods as Pavese understands them are types;
ii) Effective methods stand in a many–one relation to tasks;
iii) Knowing an effective method for V-ing as part of a practical proposition is not sufficient for knowing how to V.

Establishing (i) and (ii) is not difficult. In Pavese's view, a method is a way to break down a task that can be realised in various sequences of token actions, and it seems natural to think of a method as a type. Furthermore, there are many methods for a task, just as there are many different algorithms for calculating a function (Pavese, 2015b, p. 3).

The difficult point is (iii), which requires a counterexample to the sufficiency direction of Pavese's account. Pavese's account can deal with Hornsby's touch-typist easily. According to EFFECTIVE, to know how to touch-type, one needs to know a method for touch-typing that issues at least one successful event of touch-typing for every touch-typing-relevant situation. It should be clear that the method known by Jim is neither complete nor reliable. If Jim were to face the situation of writing the word "Ziggurat," he would not produce any event of touch-typing because he can't touch-type the letter "z." Even when he produces an output event (e.g., with words that only involve letters in "Afghanistan"), many of these events will presumably be failures.

The fact that EFFECTIVE deals with this kind of case does not demonstrate that it solves the generality problem. As I pointed out above, in order to resolve the generality problem, one needs to rule

[31] One might worry that this restriction on methods is incompatible with the fact that humans are imperfectly reliable (Hawley, 2003, p. 24). To address this, one would need to either lower the reliability requirement or circumscribe the input situations.

out both insufficiently and overly general ways of acting. In the rest of this section, I will argue that there are some cases of overly general methods not addressed by this account.

It is a central feature of knowing how that enables coping with novel situations (Fridland, 2013; Hornsby, 2011, pp. 89–95; Ryle, 1976; 1949, p. 129; Stanley, 2011, pp. 181–185; Wiggins, 2012). If Janelle knows how to construct natural deduction proofs, then she will be in a position to produce proofs of novel sequents by applying some general proof strategies. If Alaric knows how to follow knitting instructions, then he will be in a position to follow instructions to make a new garment by applying a method for following instructions. In such cases, agents exercise general know-how in order to *gain* knowledge of how to deal with a specific kind of situation. By exercising her knowledge how to construct natural deduction proofs, Janelle can *learn* how to prove a new sequent. By exercising his knowledge how to follow knitting instructions, Alaric can *learn* how to knit a new kind of scarf.[32]

These cases raise the generality problem in a new guise. In virtue of having general know-how, both Janelle and Alaric are in possession of effective methods for performing some general activity. Janelle knows how to construct natural deduction proofs, and Alaric knows how to follow knitting instructions. This much is in line with Pavese's picture. However, these general methods also provide both agents with methods for dealing with some more specific tasks that they *do not* know how to do. Janelle is in possession of a method for proving $(P \rightarrow Q), (Q \rightarrow R) \vdash (P \rightarrow R)$, which might be something like: *apply general proof strategies.* This method is both *implementable* (if she can apply basic proof strategies) and *effective* because applying strategies is a reliable way to prove this sequent. Similarly, Alaric's method—*follow the instructions*—is implementable (supposing that he knows how to knit, purl, cast on and off, and how to follow instructions) and *effective* (if the instructions are well-written). Both agents possess effective methods for V-ing of the form: learn how to V, then V. However, neither of them knows how to V because they need to learn how to V in order to V, and one cannot learn what one already knows.[33]

To fulfil Pavese's conditions, Janelle and Alaric need not only to possess effective methods but also to *know* those methods as part of suitably practical propositions. To get this result, we can imagine that Janelle and Alaric often apply their learning-related know-how to fresh problems. This means that they have good evidence that for any task of the relevant kind (i.e., any knitting or natural deduction task), their general methods will provide an effective way to bring off that task. With this extra detail, Janelle and Alaric plausibly know that learning how to V, then V-ing is an effective way to *V* as part of a suitably practical proposition, despite not knowing how to V.

These cases point toward another recipe for counterexamples to the sufficiency direction of intellectualist accounts. If *learn to V, then V* is a live option for an agent, then this is a method for V-ing. However, knowing that *learning to V, then V-ing is a way to V* is not sufficient for knowing how to V. Learning how to V can be reliable, implementable, and known as part of a PMP, so appealing to these conditions does not rule out these cases. Furthermore, a method like *learn to V, then V* is sufficient for knowing how to learn to V, so the problem isn't just that methods involving learning do not suffice for knowledge-how. The intellectualist needs to find a way to distinguish between knowing how to do something and knowing how to *learn* to do it.[34]

Pavese's account does much better than Stanley and Williamson's account in responding to the generality problem, dealing with some of the generality-style problem cases. However, her account

[32] See Hawley's learning Russian example (2003, pp. 19–20), Setiya's Tango example (2008, p. 406), and Bengson and Moffett's Kytoon example (2011a, pp. 172–173).

[33] If this seems glib, it is easy to add further details to the cases that secure ignorance of the more specific methods.

[34] Some anti-intellectualist theories face a related Sufficiency problem (Bengson & Moffett 2011a, pp.172–173). For a contextualist treatment of this problem for one kind of anti-intellectualist view, see Habgood-Coote (2018).

still needs to find a way to deal with counterexamples stemming from learning-related methods. If one could find a way to develop her account to address these problems, that would be a strong reason to prefer her view to Stanley and Williamson's.

5 | HOW GENERAL IS THE GENERALITY PROBLEM?

I have argued that the generality problem will afflict any version of intellectualism committed to something like INTELLECTUALISM as this minimal theory appeals to way-types.[35] This means that the generality problem affects the various iterations of Stanley and Williamson's view, as well as Cath's revisionary intellectualism (Cath, 2015). And, as I argued in the previous section, Pavese faces at least some generality-style problem cases. To avoid the generality problem, an intellectualist could claim that knowledge how to V is knowledge of propositions about V-ing that don't involve ways of V-ing or appeal to way-*tokens.* Both options are implausible. A non-way-involving intellectualist account would be in tension with the evidence about the semantics of how-interrogatives, and an account that appealed to way-tokens would not be able to explain the fact that knowledge-how is a kind of general knowledge (see footnote 19).

There are also some non-intellectualist views that face generality problems. Objectualist accounts treat knowledge-how as objectual knowledge of a way of acting (Bengson & Moffett, 2011a; Michaelson, n.d.), meaning that they face the issue of explaining which ways of V-ing are such that objectual knowledge of them is sufficient for knowing how. Brogaard's property-based account also has an open variable for way-types, meaning that she too faces a generality problem (Brogaard, 2011). To be fair, accounts that identify knowledge how to V with a kind of ability or disposition to V face the related problem of specifying a kind of ability that is necessary and sufficient for knowledge-how (Bengson & Moffett, 2011a; Glick, 2012). This isn't strictly speaking a version of the generality problem, but it does leave ability theorists with their own sufficiency problem.

However, not all non-intellectualist theories face this kind of problem. Consider the *actist* view that the object of knowledge-how is an activity, meaning that knowledge how to swim is literally knowing *swimming* (Hornsby, 2011; Wiggins, 2012). There is only one activity-type in question here—V-ing—meaning that the generality problem cannot get off the ground. That some anti-intellectualist views are immune to the generality problem is important for the dialectic because it stops the intellectualist getting off the hook by contending that all accounts of knowledge-how face similar problems.

6 | CONCLUSION

The existence of a generality problem challenges the basic explanatory power of a view, questioning whether it can offer a satisfactory account of the target phenomenon. As Stanley and Williamson's view doesn't distinguish ways of acting that are relevant for a given activity, their view significantly over-generates knowledge-how and fails to make correct predictions about which propositions are sufficient for knowing-how. Pavese's account does better in virtue of making clearer commitments about what relevant methods are, but it continues to face a version of this problem.

[35] Versions of the generality problem may also occur for the application of the answer theory to other species of knowledge-wh that quantify over types (such as knowledge-why). Thanks to an anonymous reviewer for this observation.

I have argued that the obvious responses to the generality problem for intellectualism are unsatisfactory, meaning that the onus is on intellectualists to provide an account of which ways of V-ing are relevant for knowledge how to V.

Three lines of response deserve further development. First, there are various contextualist accounts. These theories provide the right kind of machinery to resolve the generality problem in cases where the context is sufficiently rich. Their problem was that they did not demonstrate that context will always be rich enough to fix generality, leaving them relying on an unsupported linguistic claim. Secondly, one might appeal to the methods involved in psychological explanation to pick out the relevant ways. The task for this theory is to give reasons to think that empirical inquiry will yield just one way of acting, which figures in explanations at the personal level. Thirdly, Pavese's analogy between methods and algorithms provides a helpful framework for thinking about ways of acting. It is possible that developing this analogy could address the counterexamples to Pavese's view. Alternatively, one could take the problem cases head on by giving an account of the distinction between knowing how to do something and knowing how to learn to do it.

A striking feature of Stanley and Williamson's intellectualism is its reliance on linguistic evidence and their claim that the linguistic evidence entails their account of knowledge-how (Stanley and Williamson, 2001, p. 440). I have been arguing that this view faces a substantive philosophical problem. This point has a more general methodological upshot. Accepting that linguistic theory is a legitimate source of evidence about philosophical problems doesn't mean that linguistic considerations always trump philosophical considerations when the two come into conflict. One might think that although a linguistic theory suggests a certain account of a phenomenon, this account (and the corresponding bit of linguistic theory) ought to be rejected on purely philosophical grounds.

ACKNOWLEDGEMENTS

Thanks to Sebastian Becker, Corine Besson, Mark Bowker, Jessica Brown, Lucy Campbell, Elizabeth Fricker, Katherine Hawley, Jennifer Hornsby, Robin McKenna, Jennifer Nagel, Andrew Peet, Kieran Setiya, Maja Spener, Brian Weatherson, audiences at the Edinburgh Graduate Conference 2015, the 2015 Joint Session in Warwick, and Open Minds X in Manchester. Special thanks to Mikkel Gerken for comments at the Edinburgh Graduate conference and to Dylan Bianchi for conversations that drastically improved Section 4.6. Thanks also to four anonymous reviewers. Research for this article was funded by a United Kingdom Arts and Humanities Research Council doctoral grant.

REFERENCES

Alston, W. (1995). How to think about reliability. *Philosophical Topics*, *23*(1), 1–29.

Bengson, J. & Moffett, M. (2011a). Non-propositional intellectualism. In J. Bengson & M. Moffett (Eds.), *Knowing how: Essays on Knowledge, Mind, and Action* (pp. 161–195). Oxford: Oxford University Press.

Bengson, J. & Moffett, M. (2011b). Two conceptions of mind and action: Knowing how and the philosophical theory of intelligence. In J. Bengson & M. Moffett (Eds.), *Knowing how: Essays on knowledge, mind, and action* (pp. 1–58). Oxford: Oxford University Press.

Bhatt, R. (2006). *Covert modality in non-finite contexts*. Berlin: Molton De Gruyter.

Bianchi, D. (n.d.) *Know-how and skillful action: A rule-free account of guidance*. Unpublished manuscript.

Boër, S. & Lycan, W. (1986). *Knowing who*. Cambridge, MA: MIT Press.

Braun, D. (2006). Now you know who Hong Oak Yun is. *Philosophical Issues*, *16*(1), 24–42.

Braun, D. (2011). Knowing how and knowing answers. In J. Bengson & M. Moffett (Eds.), *Knowing how: Essays on knowledge, mind, and Action* (pp. 244–260). Oxford: Oxford University Press.

Brogaard, B. (2009). What Mary did yesterday: Reflections on knowledge-*wh*. *Philosophy and Phenomenological Research*, *78*(2), 439–467.

Brogaard, B. (2011). Knowledge-how: A unified account. In J. Bengson & M. Moffett (Eds.), *Knowing how: Essays on knowledge, mind, and action* (pp. 136–160). Oxford: Oxford University Press.

Brown, D. G. (1970). Knowing how and knowing that, what. In O. P. Wood & G. Pitcher (Eds.), *Ryle* (pp. 220–227). London: Macmillan.
Brown, J. (1998). Natural kind terms and recognitional capacities. *Mind*, *107*(426), 275–303.
Brown, J. A. (2013). Knowing-how: Linguistics and cognitive science. *Analysis*, *73*(2), 220–227.
Cath, Y. (2015). Revisionary intellectualism and Gettier. *Philosophical Studies*, *172*(1), 7–27.
Cohen, S. (1986). Knowledge and context. *The Journal of Philosophy*, *83*(10), 574–583.
Comesaña, J. (2006). A well-founded solution to the generality problem. *Philosophical Studies*, *129*(1), 27–47.
Conee, E. & Feldman, R. (1998). The generality problem for Reliabilism. *Philosophical Studies*, *89*(1), 1–29.
Cross, C. (1991). Explanation and the theory of questions. *Erkenntnis*, *34*(2), 237–260.
Davidson, D. (1967/2006). The logical form of action sentences. In E. Lepore & K. Ludwig (Eds.), *The essential Davidson* (pp. 72–89). Oxford: Oxford University Press.
DeRose, K. (2009). *The case for contextualism: knowledge, skepticism, and context* (Vol. 1). Oxford: Clarendon Press.
Devitt, M. (2011). Methodology and the nature of knowing how. *Journal of Philosophy*, *108*(4), 205–218.
Drayson, Z. (2012). The uses and abuses of the personal/subpersonal distinction. *Philosophical Perspectives*, *26*(1), 1–18.
Farkas, K. (2016). Know-wh does not reduce to know-that. *American Philosophical Quarterly*, *53*(2), 109–122.
Fridland, E. (2013). Problems with intellectualism. *Philosophical Studies*, *165*(3), 879–891.
George, B. R. (2013). Knowing-"wh", mention-some readings, and non-reducibility. *Thought: A Journal of Philosophy*, *2*(2), 166–177.
Ginzburg, M. (1995a). Resolving questions, I. *Linguistics and Philosophy*, *18*(5), 495–527.
Ginzburg, M. (1995b). Resolving questions, II. *Linguistics and Philosophy*, *18*(6), 567–609.
Ginzburg, M. (2011). How to resolve "how to". In J. Bengson & M. Moffett (Eds.), *Knowing how: Essays on knowledge, mind, and action* (pp. 215–241). Oxford: Oxford University Press.
Glick, E. (2011). Two methodologies for evaluating intellectualism. *Philosophy and Phenomenological Research*, *83*(2), 398–434.
Glick, E. (2012). Abilities and know-how attributions. In J. Brown & M. Gerken (Eds.), *Knowledge ascriptions* (pp. 120–139). Oxford: Oxford University Press.
Glick, E. (2015). Practical modes of presentation. *Noûs*, *49*(3), 538–559.
Goldman, A. (1979). What is justified belief? In G. Pappas (Ed.), *Justification and knowledge* (pp. 1–25). Boston: Reidel, D.
Goldman, A. & Beddor, B. (2015). Reliabilist epistemology. In E. N. Zalta (Ed.), *The Stanford encyclopedia of philosophy* (Winter 2016 ed.) Palo Alto: Stanford CSLI. Retrieved from https://plato.stanford.edu/archives/win2016/entries/reliabilism/
Groenendijk, J. & Stokhof, M. (1984). *Studies on the semantics of questions and the pragmatics of answers.* Amsterdam, The Netherlands. Retrieved from http://dare.uva.nl/record/123669
Habgood-Coote, J. (2018). Knowledge-how, abilities, and questions. *Australasian Journal of Philosophy* DOI: 10.1080/00048402.2018.1434550.
Hamblin, C. (1958). Questions. *Australasian Journal of Philosophy*, *36*(3), 159–168.
Hamblin, C. (1973). Questions in Montague English. *Foundations of Language*, *10*(1), 41–53.
Hawley, K. (2003). Success and knowledge-how. *American Philosophical Quarterly*, *40*(1), 19–31.
Heller, M. (1995). The simple solution to the generality problem. *Noûs*, *29*, 501–515.
Higginbotham, J. (1996). The semantics of questions. In S. Lappin (Ed.), *The handbook of contemporary semantic theory* (1st ed., pp. 361–384). Oxford: Blackwell.
Hornsby, J. (1980). *Actions*. London: Routledge and Kegan Paul.
Hornsby, J. (2011). Ryle's knowing-how, and knowing how to act. In J. Bengson & M. Moffett (Eds.), *Knowing how: Essays on knowledge, mind, and action* (pp. 80–100). Oxford: Oxford University Press.
Hornsby, J. (2013). Basic activity. *Aristotelian Society Supplementary Volume*, *87*(1), 1–18.
Jaworski, W. (2009). The logic of how-questions. *Synthese*, *166*(1), 133–155.
Karttunen, L. (1977). Syntax and semantics of questions. *Linguistics and Philosophy*, *1*(1), 3–44.
Lahiri, U. (2002). *Questions and answers in embedded contexts*. Oxford: Oxford University Press.
Lewis, D. (1996). Elusive knowledge. *Australasian Journal of Philosophy*, *74*(4), 549–567.
Masto, M. (2010). Questions, answers, and knowledge-wh. *Philosophical Studies*, *147*(3), 395–413.
Michaelson, E. (n.d.). Knowledge (how) by acquaintance. Unpublished manuscript.
Milner, D. & Goodale, M. (2013). *Sight unseen: An exploration of conscious and unconscious vision* (2nd ed.). Oxford: Oxford University Press.
Noë, A. (2005). Against intellectualism. *Analysis*, *65*(4), 278–290.
Parent, T. (2014). Knowing-wh and embedded question. *Philosophy Compass*, *9*(2), 81–95.
Parsons, T. (1990). *Events in the semantics of English: A study in subatomic sentences*. Cambridge, MA: MIT Press.
Parsons, T. (1995). Thematic relations and arguments. *Linguistic Inquiry*, *26*(4), 635–662.
Pavese, C. (2015a). Knowing a rule. *Philosophical Issues*, *25*(1), 165–188.
Pavese, C. (2015b). Practical senses. *Philosophers' Imprint*, *15*(29), 1–25.
Pavese, C. (2016a). Skill in epistemology I: Skill and knowledge. *Philosophy Compass*, *11*(11), 662–649.
Pavese, C. (2016b). Skill in epistemology II: Skill and know how. *Philosophy Compass*, *11*(11), 650–660.
Pavese, C. (2017). Know how and gradability. *Philosophical Review*, *123*(3), 345–383.

Roberts, C. (2009). Know-how: A compositional approach. In E. Hinrichs & J. Nerbonne (Eds.), *Theory and evidence in semantics* (pp. 183–213). Stanford, CA: CSLI Press.
Ryle, G. (1949/2009). *The concept of mind* (60th Anniversary ed.). London: Routledge.
Ryle, G. (1976). Improvisation. *Mind*, *85*(337), 69–83.
Sæbø, K. J. (2016). "How" questions and the manner-method distinction. *Synthese*, *193*(10), 3169–3194.
Schaffer, J. (2007). Knowing the answer. *Philosophy and Phenomenological Research*, *75*(2), 383–403.
Setiya, K. (2008). Practical knowledge. *Ethics*, *118*(3), 388–409.
Soderbergh, S. (2013). *Behind the candelabra.* HBO, USA.
Sosa, E. (2010). *Knowing full well*. Princeton, NJ: Princeton University Press.
Stanley, J. (2011). *Know how*. Oxford: Oxford University Press.
Stanley, J. & Williamson, T. (2001). Knowing how. *Journal of Philosophy*, *98*(8), 411–444.
Steward, H. (2012). Actions as processes. *Philosophical Perspectives*, *26*(1), 373–388.
Thomason, R. & Stalnaker, R. (1973). A semantic theory of adverbs. *Linguistic Inquiry*, *4*(2), 195–220.
Weatherson, B. (2012). The temporal generality problem. *Logos and Episteme*, *3*(1), 117–122.
White, A. (1982). *The nature of knowledge*. Totowa: Rowman and Littlefield.
Wiggins, D. (2012). Practical knowledge: Knowing how to and knowing that. *Mind*, *121*(481), 97–130.
Wisniewski, A. (2015). Semantics of questions. In S. Lappin & C. Fox (Eds.), *The handbook of contemporary semantic theory* (2nd ed., pp. 273–313). Oxford: Wiley-Blackwell.
Wunderlich, M. (2003). Vector reliability: A new approach to epistemic justification. *Synthese*, *136*(2), 237–262.

How to cite this article: Habgood-Coote J. The generality problem for intellectualism. *Mind Lang*. 2018;33:242–262. https://doi.org/10.1111/mila.12177